

attcggtctg agttcacctg gtgctgcttt gacttcaggc tcttccttct gccagctcc 60
 gtcccaccca gcagcccga gagaaaggag gcagctggca ccacactggg ctttgagac 120
 actgcgggga ctgtggaccc caccctgctg cacggagctc ctgcaaaagc aaacctgaga 180
 accttgggtc ctcccagcgc ccagcc atg ggg gaa ctg tgc cgc agg gac tcc 233

Met Gly Glu Leu Cys Arg Arg Asp Ser
 1 5

gca ctc acg gca ctg gac gag gag aca ctg tgg gag atg atg gag agc 281
 Ala Leu Thr Ala Leu Asp Glu Glu Thr Leu Trp Glu Met Met Glu Ser
 10 15 20 25

cac cgc cac agg atc gta cgc tgc atc tgc ccc agc cgc ctc acc ccc 329
 His Arg His Arg Ile Val Arg Cys Ile Cys Pro Ser Arg Leu Thr Pro
 30 35 40

tac ctg cgc cag gcc aag gtg ctg tgc cag ctg gac gag gag gag gtg 377
 Tyr Leu Arg Gln Ala Lys Val Leu Cys Gln Leu Asp Glu Glu Glu Val
 45 50 55

ctg cac agc ccc cgg ctc acc aac agc gcc atg cgg gcc ggg cac ttg 425
 Leu His Ser Pro Arg Leu Thr Asn Ser Ala Met Arg Ala Gly His Leu
 60 65 70

ctg gat ttg ctg aag act cga ggg aag aac ggg gcc atc gcc ttc ctg 473
 Leu Asp Leu Leu Lys Thr Arg Gly Lys Asn Gly Ala Ile Ala Phe Leu
 75 80 85

gag agc ctg aag ttc cac aac cct gac gtc tac acc ctg gtc acc ggg 521
 Glu Ser Leu Lys Phe His Asn Pro Asp Val Tyr Thr Leu Val Thr Gly
 90 95 100 105

ctg cag cct gat gtt gac ttc agt aac ttt agc ggt ctc atg gag aca 569
 Leu Gln Pro Asp Val Asp Phe Ser Asn Phe Ser Gly Leu Met Glu Thr
 110 115 120

tcc aag ctg acc gag tgc ctg gct ggg gcc atc ggc agc ctg cag gag 617
 Ser Lys Leu Thr Glu Cys Leu Ala Gly Ala Ile Gly Ser Leu Gln Glu
 125 130 135

gag ctg aac cag gaa aag ggg cag aag gag gtg ctg ctg cgg cgg tgc 665
 Glu Leu Asn Gln Glu Lys Gly Gln Lys Glu Val Leu Leu Arg Arg Cys
 140 145 150

cag cag ctg cag gag cac ctg ggc ctg gcc gag acc cgt gcc gag ggc 713
 Gln Gln Leu Gln Glu His Leu Gly Leu Ala Glu Thr Arg Ala Glu Gly
 155 160 165

ctg cac cag ctg gag gct gac cac agc cgc atg aag cgt gag gtt agc 761
 Leu His Gln Leu Glu Ala Asp His Ser Arg Met Lys Arg Glu Val Ser
 170 175 180 185

gca cac ttc cat gag gtg ctg agg ctg aag gac gag atg ctc agc ctc 809
 Ala His Phe His Glu Val Leu Arg Leu Lys Asp Glu Met Leu Ser Leu
 190 195 200

FIG. 1A

tcg	ctg	cac	tat	agc	aat	gcg	ctg	cag	gag	aag	gag	ctg	gcc	gcc	tca	857
Ser	Leu	His	Tyr	Ser	Asn	Ala	Leu	Gln	Glu	Lys	Glu	Leu	Ala	Ala	Ser	
			205					210					215			
cgc	tgc	cgc	agc	ctg	cag	gag	gag	ctg	tat	cta	ctg	aag	cag	gag	ctg	905
Arg	Cys	Arg	Ser	Leu	Gln	Glu	Glu	Leu	Tyr	Leu	Leu	Lys	Gln	Glu	Leu	
		220					225					230				
cag	cga	gcc	aac	atg	gtt	tcc	tcc	tgt	gag	ctg	gaa	ttg	caa	gag	cag	953
Gln	Arg	Ala	Asn	Met	Val	Ser	Ser	Cys	Glu	Leu	Glu	Leu	Gln	Glu	Gln	
	235					240					245					
tcc	ctg	agg	aca	gcc	agc	gac	cag	gag	tcc	ggg	gat	gag	gag	ctg	aac	1001
Ser	Leu	Arg	Thr	Ala	Ser	Asp	Gln	Glu	Ser	Gly	Asp	Glu	Glu	Leu	Asn	
250					255					260					265	
cgc	ctg	aag	gag	gag	aat	gag	aaa	ctg	cgc	tcg	ctg	act	ttc	agc	ctg	1049
Arg	Leu	Lys	Glu	Glu	Asn	Glu	Lys	Leu	Arg	Ser	Leu	Thr	Phe	Ser	Leu	
			270					275						280		
gcg	gag	aag	gac	att	ctg	gag	cag	agc	ctg	gac	gag	gcg	cgg	ggg	agc	1097
Ala	Glu	Lys	Asp	Ile	Leu	Glu	Gln	Ser	Leu	Asp	Glu	Ala	Arg	Gly	Ser	
			285					290					295			
cga	cag	gag	ctg	gtg	gag	cgc	atc	cac	tcg	ctg	cgg	gag	cgg	gcc	gtg	1145
Arg	Gln	Glu	Leu	Val	Glu	Arg	Ile	His	Ser	Leu	Arg	Glu	Arg	Ala	Val	
		300					305					310				
gct	gcc	gag	agg	cag	cga	gag	cag	tac	tgg	gaa	gag	aag	gaa	cag	acc	1193
Ala	Ala	Glu	Arg	Gln	Arg	Glu	Gln	Tyr	Trp	Glu	Glu	Lys	Glu	Gln	Thr	
	315					320					325					
ctg	ctg	cag	ttc	cag	aag	agt	aag	atg	gcc	tgc	caa	ctc	tac	agg	gag	1241
Leu	Leu	Gln	Phe	Gln	Lys	Ser	Lys	Met	Ala	Cys	Gln	Leu	Tyr	Arg	Glu	
330					335					340					345	
aag	gtg	aat	gcg	ctg	cag	gcc	cag	gtg	tgc	gag	ctg	cag	aag	gag	cga	1289
Lys	Val	Asn	Ala	Leu	Gln	Ala	Gln	Val	Cys	Glu	Leu	Gln	Lys	Glu	Arg	
				350					355					360		
gac	cag	gcg	tac	tcc	gcg	agg	gac	agt	gct	cag	agg	gag	att	tcc	cag	1337
Asp	Gln	Ala	Tyr	Ser	Ala	Arg	Asp	Ser	Ala	Gln	Arg	Glu	Ile	Ser	Gln	
			365					370					375			
agc	ctg	gtg	gag	aag	gac	tcc	ctc	cgc	agg	cag	gtg	ttc	gag	ctg	acg	1385
Ser	Leu	Val	Glu	Lys	Asp	Ser	Leu	Arg	Arg	Gln	Val	Phe	Glu	Leu	Thr	
		380					385					390				
gac	cag	gtc	tgc	gag	ctg	cgc	aca	cag	ctt	cgc	cag	ctg	cag	gca	gag	1433
Asp	Gln	Val	Cys	Glu	Leu	Arg	Thr	Gln	Leu	Arg	Gln	Leu	Gln	Ala	Glu	
		395				400					405					
cct	ccg	ggt	gtg	ctc	aag	cag	gaa	gcc	agg	acc	agg	gag	ccc	tgt	cca	1481
Pro	Pro	Gly	Val	Leu	Lys	Gln	Glu	Ala	Arg	Thr	Arg	Glu	Pro	Cys	Pro	
410					415					420				425		

FIG. 1B

cgg gag aag cag cgg ctg gtg cgg atg cat gcc atc tgc ccc aga gac	1529
Arg Glu Lys Gln Arg Leu Val Arg Met His Ala Ile Cys Pro Arg Asp	
430 435 440	
gac agc gac tgc agc ctc gtc agc tcc aca gag tct cag ctc ttg tcg	1577
Asp Ser Asp Cys Ser Leu Val Ser Ser Thr Glu Ser Gln Leu Leu Ser	
445 450 455	
gac ctg agt gcc acg tcc agc cgc gag ctg gtg gac agc ttc cgc tcc	1625
Asp Leu Ser Ala Thr Ser Ser Arg Glu Leu Val Asp Ser Phe Arg Ser	
460 465 470	
agc agc ccc gcg ccc ccc agc cag cag tcc ctg tac aag cgg gtg gcc	1673
Ser Ser Pro Ala Pro Pro Ser Gln Gln Ser Leu Tyr Lys Arg Val Ala	
475 480 485	
gag gac ttc ggg gaa gaa ccc tgg tct ttc agc agc tgc ctg gag atc	1721
Glu Asp Phe Gly Glu Glu Pro Trp Ser Phe Ser Ser Cys Leu Glu Ile	
490 495 500 505	
ccg gag gga gac ccg gga gcc ctg ccg gga gct aag gca ggc gac cca	1769
Pro Glu Gly Asp Pro Gly Ala Leu Pro Gly Ala Lys Ala Gly Asp Pro	
510 515 520	
cac ctg gat tat gag ctc cta gac acg gca gac ctt ccg cag ctg gaa	1817
His Leu Asp Tyr Glu Leu Leu Asp Thr Ala Asp Leu Pro Gln Leu Glu	
525 530 535	
agc agc ctg cag cca gtc tcc cct gga agg ctt gat gtc tcg gag agc	1865
Ser Ser Leu Gln Pro Val Ser Pro Gly Arg Leu Asp Val Ser Glu Ser	
540 545 550	
ggc gtc ctc atg cgg cgg agg cca gcc cgc agg atc ctg agc cag gtc	1913
Gly Val Leu Met Arg Arg Arg Pro Ala Arg Arg Ile Leu Ser Gln Val	
555 560 565	
acc atg ctg gcg ttc cag ggg gat gca ttg ctg gag cag atc agc gtc	1961
Thr Met Leu Ala Phe Gln Gly Asp Ala Leu Leu Glu Gln Ile Ser Val	
570 575 580 585	
atc ggc ggg aac ctc acg ggc atc ttc atc cac cgg gtc acc ccg ggc	2009
Ile Gly Gly Asn Leu Thr Gly Ile Phe Ile His Arg Val Thr Pro Gly	
590 595 600	
tcg gcg gcg gac cag atg gcc ttg cgc ccg ggc acc cag att gtg atg	2057
Ser Ala Ala Asp Gln Met Ala Leu Arg Pro Gly Thr Gln Ile Val Met	
605 610 615	
gtt gat tac gaa gcc tca gag ccc ttg ttc aag gca gtc ctg gag gac	2105
Val Asp Tyr Glu Ala Ser Glu Pro Leu Phe Lys Ala Val Leu Glu Asp	
620 625 630	
acg acc ctg gag gag gcc gtg ggg ctt ctc agg agg gtg gac ggc ttc	2153
Thr Thr Leu Glu Glu Ala Val Gly Leu Leu Arg Arg Val Asp Gly Phe	
635 640 645	

FIG. 1C

tgc tgc ctg tct gtg aag gtc aac acg gac ggt tat aag agg cta ctc	2201
Cys Cys Leu Ser Val Lys Val Asn Thr Asp Gly Tyr Lys Arg Leu Leu	
650 655 660 665	
cag gac ctg gag gcc aaa gtg gcg acc tcg ggg gac tca ttc tac atc	2249
Gln Asp Leu Glu Ala Lys Val Ala Thr Ser Gly Asp Ser Phe Tyr Ile	
670 675 680	
cgg gtc aac ctg gcc atg gag ggc agg gcc aaa ggg gag ctg cag gtg	2297
Arg Val Asn Leu Ala Met Glu Gly Arg Ala Lys Gly Glu Leu Gln Val	
685 690 695	
cat tgc aac gag gtc ctg cac gtc acc gac acc atg ttc cag ggc tgc	2345
His Cys Asn Glu Val Leu His Val Thr Asp Thr Met Phe Gln Gly Cys	
700 705 710	
ggc tgc tgg cat gcc cac cgc gtg aac tct tac acc atg aag gat act	2393
Gly Cys Trp His Ala His Arg Val Asn Ser Tyr Thr Met Lys Asp Thr	
715 720 725	
gcc gcg cac ggc acc atc ccc aac tac tcc agg gct cag cag cag ctc	2441
Ala Ala His Gly Thr Ile Pro Asn Tyr Ser Arg Ala Gln Gln Gln Leu	
730 735 740 745	
ata gcc ctc atc cag gac atg act cag cag tgc acc gtg acc cgc aag	2489
Ile Ala Leu Ile Gln Asp Met Thr Gln Gln Cys Thr Val Thr Arg Lys	
750 755 760	
cca tct tct ggg gga cca cag aag ctg gtc cgc atc gtc agt atg gac	2537
Pro Ser Ser Gly Gly Pro Gln Lys Leu Val Arg Ile Val Ser Met Asp	
765 770 775	
aaa gcc aag gcc agc cct ctg cgt ttg tcc ttt gac agg ggc cag ttg	2585
Lys Ala Lys Ala Ser Pro Leu Arg Leu Ser Phe Asp Arg Gly Gln Leu	
780 785 790	
gac ccc agc agg atg gag ggc tcc agc acg tgc ttc tgg gcc gag agc	2633
Asp Pro Ser Arg Met Glu Gly Ser Ser Thr Cys Phe Trp Ala Glu Ser	
795 800 805	
tgc ctc acc ctg gtg ccc tat acc ctg gtg tgg ccc cat cga ccc gcc	2681
Cys Leu Thr Leu Val Pro Tyr Thr Leu Val Trp Pro His Arg Pro Ala	
810 815 820 825	
cgg ccc cgg cct gtg ctc ctc gtg ccc agg gcg gtt ggg aag atc ctg	2729
Arg Pro Arg Pro Val Leu Leu Val Pro Arg Ala Val Gly Lys Ile Leu	
830 835 840	
agc gag aaa ctg tgc ctc ctc caa ggg ttt aag aag tgc ctg gca gag	2777
Ser Glu Lys Leu Cys Leu Leu Gln Gly Phe Lys Lys Cys Leu Ala Glu	
845 850 855	
tac ttg agc cag gag gag tat gag gcc tgg agc cag aga ggg gac atc	2825
Tyr Leu Ser Gln Glu Glu Tyr Glu Ala Trp Ser Gln Arg Gly Asp Ile	
860 865 870	

FIG. 1D

M	G	E	L	C	R	R	D	S	A	L	T	A	L	D	E	E	T	L	W	20
ATG	GGG	GAA	CTG	TGC	CGC	AGG	GAC	TCC	GCA	CTC	ACG	GCA	CTG	GAC	GAG	GAG	ACA	CTG	TGG	160
E	M	M	E	S	H	R	H	R	I	V	R	C	I	C	P	S	R	L	T	40
GAG	ATG	ATG	GAG	AGC	CAC	CGC	CAC	AGG	ATC	GTA	CGC	TGC	ATC	TGC	CCC	AGC	CGC	CTC	ACC	120
P	Y	L	R	Q	A	K	V	L	C	Q	L	D	E	E	E	V	L	H	S	60
CCC	TAC	CTG	CGC	CAG	GCC	AAG	GTG	CTG	TGC	CAG	CTG	GAC	GAG	GAG	GAG	GTG	CTG	CAC	AGC	180
P	R	L	T	N	S	A	M	R	A	G	H	L	L	D	L	L	K	T	R	80
CCC	CGG	CTC	ACC	AAC	AGC	GCC	ATG	CGG	GCC	GGG	CAC	TTG	CTG	GAT	TTG	CTG	AAG	ACT	CGA	240
G	K	N	G	A	I	A	F	L	E	S	L	K	F	H	N	P	D	V	Y	100
GGG	AAG	AAC	GGG	GCC	ATC	GCC	TTC	CTG	GAG	AGC	CTG	AAG	TTC	CAC	AAC	CCT	GAC	GTC	TAC	300
T	L	V	T	G	L	Q	P	D	V	D	F	S	N	F	S	G	E	S	S	120
ACC	CTG	GTC	ACC	GGG	CTG	CAG	CCT	GAT	GTT	GAC	TTC	AGT	AAC	TTT	AGC	GGT	GAG	AGC	TCC	360
D	F	D	G	L	A	G	T	S	R	N	L	R	L	L	V	T	P	G	L	140
GAC	TTT	GAC	GGT	TTG	GCA	GGC	ACT	TCT	AGG	AAC	CTC	AGG	CTC	CTG	GTA	ACC	CCA	GGT	CTC	420
M	E	T	S	K	L	T	E	C	L	A	G	A	I	G	S	L	Q	E	E	160
ATG	GAG	ACA	TCC	AAG	CTG	ACC	GAG	TGC	CTG	GCT	GGG	GCC	ATC	GGC	AGC	CTG	CAG	GAG	GAG	480
L	N	Q	E	K	G	Q	K	E	V	L	L	R	R	C	Q	Q	L	Q	E	180
CTG	AAC	CAG	GAA	AAG	GGG	CAG	AAG	GAG	GTG	CTG	CTG	CGG	CGG	TGC	CAG	CAG	CTG	CAG	GAG	540
H	L	G	L	A	E	T	R	A	E	G	L	H	Q	L	E	A	D	H	S	200
CAC	CTG	GGC	CTG	GCC	GAG	ACC	CGT	GCC	GAG	GGC	CTG	CAC	CAG	CTG	GAG	GCT	GAC	CAC	AGC	600
R	M	K	R	E	V	S	A	H	F	H	E	V	L	R	L	K	D	E	M	220
CGC	ATG	AAG	CGT	GAG	GTT	AGC	GCA	CAC	TTC	CAT	GAG	GTG	CTG	AGG	CTG	AAG	GAC	GAG	ATG	660
L	S	L	S	L	H	Y	S	N	A	L	Q	E	K	E	L	A	A	S	R	240
CTC	AGC	CTC	TCG	CTG	CAC	TAT	AGC	AAT	GCG	CTG	CAG	GAG	AAG	GAG	CTG	GCC	GCC	TCA	CGC	720
C	R	S	L	Q	E	E	L	Y	L	L	K	Q	E	L	Q	R	A	N	M	260
TGC	CGC	AGC	CTG	CAG	GAG	GAG	CTG	TAT	CTA	CTG	AAG	CAG	GAG	CTG	CAG	CGA	GCC	AAC	ATG	780
V	S	S	C	E	L	E	L	Q	E	Q	S	L	R	T	A	S	D	Q	E	280
GTT	TCC	TCC	TGT	GAG	CTG	GAA	TTG	CAA	GAG	CAG	TCC	CTG	AGG	ACA	GCC	AGC	GAC	CAG	GAG	840
S	G	D	E	E	L	N	R	L	K	E	E	N	E	K	L	R	S	L	T	300
TCC	GGG	GAT	GAG	GAG	CTG	AAC	CGC	CTG	AAG	GAG	GAG	AAT	GAG	AAA	CTG	CGC	TCG	CTG	ACT	900
F	S	L	A	E	K	D	I	L	E	Q	S	L	D	E	A	R	G	S	R	320
TTC	AGC	CTG	GCG	GAG	AAG	GAC	ATT	CTG	GAG	CAG	AGC	CTG	GAC	GAG	GCG	CGG	GGG	AGC	CGA	960
Q	E	L	V	E	R	I	H	S	L	R	E	R	A	V	A	A	E	R	Q	340
CAG	GAG	CTG	GTG	GAG	CGC	ATC	CAC	TCG	CTG	CGG	GAG	CGG	GCC	GTG	GCT	GCC	GAG	AGG	CAG	1020
R	E	Q	A	R	P	S	E	L	L	S	F	T	V	H	V	S	H	S	V	360
CGA	GAG	CAG	GCC	AGA	CCC	TCA	GAG	CTG	CTG	AGC	TTC	ACG	GTC	CAT	GTG	TCC	CAC	TCT	GTC	1080
Q	Y	W	E	E	K	E	Q	T	L	L	Q	F	Q	K	S	K	M	A	C	380
CAG	TAC	TGG	GAA	GAG	AAG	GAA	CAG	ACC	CTG	CTG	CAG	TTC	CAG	AAG	AGT	AAG	ATG	GCC	TGC	1140
Q	L	Y	R	E	K	V	N	A	L	Q	A	Q	V	C	E	L	Q	K	E	400
CAA	CTC	TAC	AGG	GAG	AAG	GTG	AAT	GCG	CTG	CAG	GCC	CAG	GTG	TGC	GAG	CTG	CAG	AAG	GAG	1200
R	D	Q	A	Y	S	A	R	D	S	A	Q	R	E	I	S	Q	S	L	V	420
CGA	GAC	CAG	GCG	TAC	TCC	GCG	AGG	GAC	AGT	GCT	CAG	AGG	GAG	ATT	TCC	CAG	AGC	CTG	GTG	1260
E	K	D	S	L	R	R	Q	V	F	E	L	T	D	Q	V	C	E	L	R	440
GAG	AAG	GAC	TCC	CTC	CGC	AGG	CAG	GTG	TTC	GAG	CTG	ACG	GAC	CAG	GTC	TGC	GAG	CTG	CGC	1320

FIG. 2A

T	Q	L	R	Q	L	Q	A	E	P	P	G	V	L	K	Q	E	A	R	T	460
ACA	CAG	CTT	CGC	CAG	CTG	CAG	GCA	GAG	CCT	CCG	GGT	GTG	CTC	AAG	CAG	GAA	GCC	AGG	ACC	1380
R	E	P	C	P	R	E	K	Q	R	L	V	R	M	H	A	I	C	P	R	480
AGG	GAG	CCC	TGT	CCA	CGG	GAG	AAG	CAG	CGG	CTG	GTG	CGG	ATG	CAT	GCC	ATC	TGC	CCC	AGA	1440
D	D	S	D	C	S	L	V	S	S	T	E	S	Q	L	L	S	D	L	S	500
GAC	GAC	AGC	GAC	TGC	AGC	CTC	GTC	AGC	TCC	ACA	GAG	TCT	CAG	CTC	TTG	TCG	GAC	CTG	AGT	1500
A	T	S	S	R	E	L	V	D	S	F	R	S	S	S	P	A	P	P	S	520
GCC	ACG	TCC	AGC	CGC	GAG	CTG	GTG	GAC	AGC	TTC	CGC	TCC	AGC	AGC	CCC	GCG	CCC	CCC	AGC	1560
Q	Q	S	L	Y	K	R	V	A	E	D	F	G	E	E	P	W	S	F	S	540
CAG	CAG	TCC	CTG	TAC	AAG	CGG	GTG	GCC	GAG	GAC	TTC	GGG	GAA	GAA	CCC	TGG	TCT	TTC	AGC	1620
S	C	L	E	I	P	E	G	D	P	G	A	L	P	G	A	K	A	G	D	560
AGC	TGC	CTG	GAG	ATC	CCG	GAG	GGA	GAC	CCG	GGA	GCC	CTG	CCG	GGA	GCT	AAG	GCA	GGC	GAC	1680
P	H	L	D	Y	E	L	L	D	T	A	D	L	P	Q	L	E	S	S	L	580
CCA	CAC	CTG	GAT	TAT	GAG	CTC	CTA	GAC	ACG	GCA	GAC	CTT	CCG	CAG	CTG	GAA	AGC	AGC	CTG	1740
Q	P	V	S	P	G	R	L	D	V	S	E	S	A	Q	A	G	R	L	P	600
CAG	CCA	GTC	TCC	CCT	GGA	AGG	CTT	GAT	GTC	TCG	GAG	AGT	GCA	CAA	GCC	GGT	CGT	CTC	CCG	1800
A	C	S	G	V	L	M	R	R	R	P	A	R	R	I	L	S	Q	V	T	620
GCC	TGC	AGC	GGC	GTC	CTC	ATG	CGG	CGG	AGG	CCA	GCC	CGC	AGG	ATC	CTG	AGC	CAG	GTC	ACC	1860
M	L	A	F	Q	G	D	A	L	L	E	Q	I	S	V	I	G	G	N	L	640
ATG	CTG	GCG	TTC	CAG	GGG	GAT	GCA	TTG	CTG	GAG	CAG	ATC	AGC	GTC	ATC	GGC	GGG	AAC	CTC	1920
T	G	I	F	I	H	R	V	T	P	G	S	A	A	D	Q	M	A	L	R	660
ACG	GGC	ATC	TTC	ATC	CAC	CGG	GTC	ACC	CCG	GGC	TCG	GCG	GCG	GAC	CAG	ATG	GCC	TTG	CGC	1980
P	G	T	Q	I	V	M	V	D	Y	E	A	S	E	P	L	F	K	A	V	680
CCG	GGC	ACC	CAG	ATT	GTG	ATG	GTT	GAT	TAC	GAA	GCC	TCA	GAG	CCC	TTG	TTC	AAG	GCA	GTC	2040
L	E	D	T	T	L	E	E	A	V	G	L	L	R	R	V	D	G	F	C	700
CTG	GAG	GAC	ACG	ACC	CTG	GAG	GAG	GCC	GTG	GGG	CTT	CTC	AGG	AGG	GTG	GAC	GGC	TTC	TGC	2100
C	L	S	V	K	V	N	T	D	G	Y	K	R	L	L	Q	D	L	E	A	720
TGC	CTG	TCT	GTG	AAG	GTC	AAC	ACG	GAC	GGT	TAT	AAG	AGG	CTA	CTC	CAG	GAC	CTG	GAG	GCC	2160
K	V	A	T	S	G	D	S	F	Y	I	R	V	N	L	A	M	E	G	R	740
AAA	GTG	GCG	ACC	TCG	GGG	GAC	TCA	TTC	TAC	ATC	CGG	GTC	AAC	CTG	GCC	ATG	GAG	GGC	AGG	2220
A	K	G	E	L	Q	V	H	C	N	E	V	L	H	V	T	D	T	M	F	760
GCC	AAA	GGG	GAG	CTG	CAG	GTG	CAT	TGC	AAC	GAG	GTC	CTG	CAC	GTC	ACC	GAC	ACC	ATG	TTC	2280
Q	G	C	G	C	W	H	A	H	R	V	N	S	Y	T	M	K	D	T	A	780
CAG	GGC	TGC	GGC	TGC	TGG	CAT	GCC	CAC	CGC	GTG	AAC	TCT	TAC	ACC	ATG	AAG	GAT	ACT	GCC	2340
A	H	G	T	I	P	N	Y	S	R	A	Q	Q	Q	L	I	A	L	I	Q	800
GCG	CAC	GGC	ACC	ATC	CCC	AAC	TAC	TCC	AGG	GCT	CAG	CAG	CAG	CTC	ATA	GCC	CTC	ATC	CAG	2400
D	M	T	Q	Q	C	T	V	T	R	K	P	S	S	G	G	P	Q	K	L	820
GAC	ATG	ACT	CAG	CAG	TGC	ACC	GTG	ACC	CGC	AAG	CCA	TCT	TCT	GGG	GGA	CCA	CAG	AAG	CTG	2460
V	R	I	V	S	M	D	K	A	K	A	S	P	L	R	L	S	F	D	R	840
GTC	CGC	ATC	GTC	AGT	ATG	GAC	AAA	GCC	AAG	GCC	AGC	CCT	CTG	CGT	TTG	TCC	TTT	GAC	AGG	2520
G	Q	L	D	P	S	R	M	E	G	S	S	T	C	F	W	A	E	S	C	860
GGC	CAG	TTG	GAC	CCC	AGC	AGG	ATG	GAG	GGC	TCC	AGC	ACG	TGC	TTC	TGG	GCC	GAG	AGC	TGC	2580
L	T	L	V	P	Y	T	L	V	R	P	H	R	P	A	R	P	R	P	V	880
CTC	ACC	CTG	GTG	CCC	TAT	ACC	CTG	GTG	CGG	CCC	CAT	CGA	CCC	GCC	CGG	CCC	CGG	CCT	GTG	2640
L	L	V	P	R	A	V	G	K	I	L	S	E	K	L	C	L	L	Q	G	900
CTC	CTC	GTG	CCC	AGG	GCG	GTT	GGG	AAG	ATC	CTG	AGC	GAG	AAA	CTG	TGC	CTC	CTC	CAA	GGG	2700
F	K	K	C	L	A	E	Y	L	S	Q	E	E	Y	E	A	W	S	Q	R	920
TTT	AAG	AAG	TGC	CTG	GCA	GAG	TAC	TTG	AGC	CAG	GAG	GAG	TAT	GAG	GCC	TGG	AGC	CAG	AGA	2760

FIG. 2B

bioRxiv preprint doi: <https://doi.org/10.1101/2021.02.11.428460>; this version posted February 11, 2021. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted bioRxiv a license to display the preprint in perpetuity. It is made available under aCC-BY-NC-ND 4.0 International license.

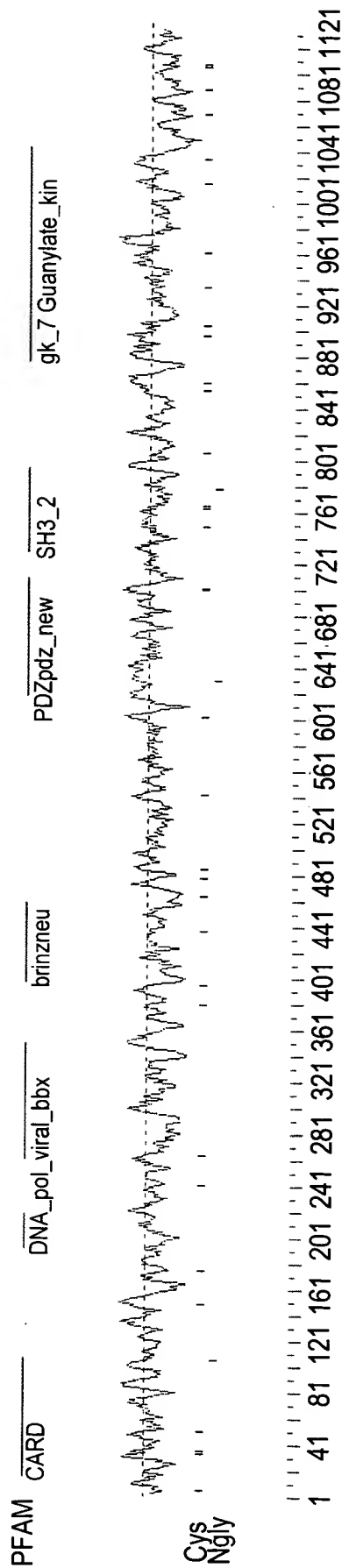


FIG. 3

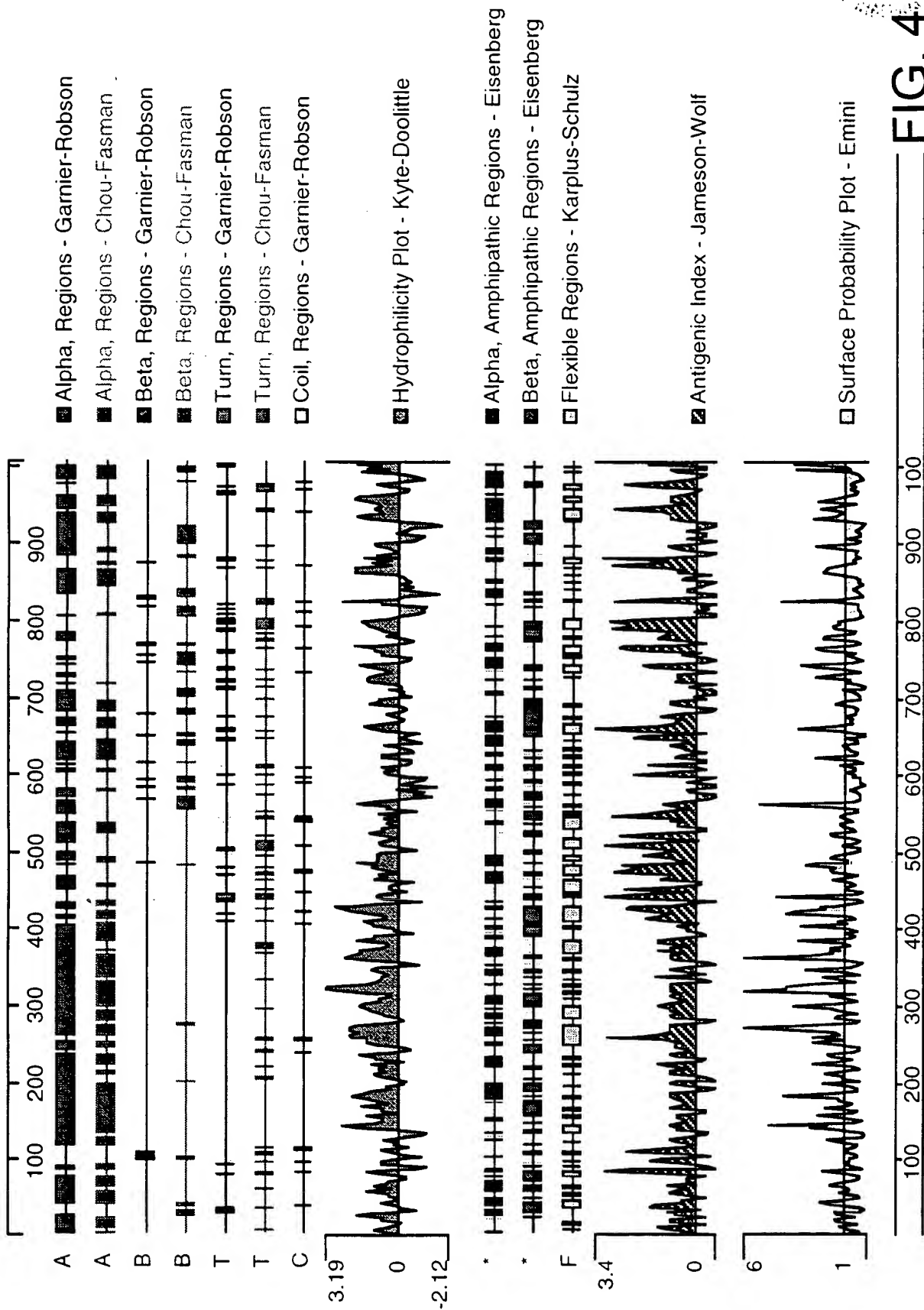


FIG. 4

CARD: domain 1 of 1, from 16 to 107: score -4.1, E = 0.94
 *->aeddrllrknrllellgeltlsgllLdhLleknvLteeeeEkikaknt
 +e + + +r + + +++s l +L++++vL + +eE++ +
 CARD14 16 EETLWEMESHRRHRIVRICICPSRLTPYLRQAKVLCQLDEEEVLHSPR 62

trr..dkareLiDsvqkkGnqAfiFlqaLretdqelllde<--*
 + + +a L+D ++++G + + +Fl++L+ +++ + + +
 CARD14 63 LTNSaMRAGHLLDLLKTRGKNGAIAFLES�KFHNPDVYTLVTGLQ 107

FIG. 5A

PDZ: domain 1 of 1, from 568 to 659: score 5.3, E = 0.39
 *->eitlekevkrqglGfsikggsdk..givvsevlpGsgaAeagGrLke
 +tt+ ++ l +i++ + + +gi++ +v pG +aA++ L++
 CARD14 568 QVTMLAF-QGDALLEQISVIGGNltGIFIHRVTPG-SAADQMA-LRP 611

GDvIlsvNG.....qdvenmsheravlaiksgg...evtLtvIrd<-
 G +I+ v+ + +++ + +e+ ++eav +++ g ++++v d
 CARD14 612 GTQIVMVDYeaseplfkAVLEDTTLEAVGLLRVRVDGfcCLSVKVNTD 659

*

FIG. 5B

CARD14 - -

SH3_2: domain 1 of 1, from 679 to 744: score -4.5, E = 3.8
 *->eyvvALYDyeagnedELsFkkGDiitvleks..ddgwweGelnr...
 +y ++ + e++ +EL ++ +++++v++ ++ g w + + ++ +
 CARD14 679 FYIRVNLA MEGRAKGELQVHCNEVLHVTDTMfGCGCWHHRVNSyt 725

...tGkeGlfpSnYVeeie<--*
 ++t G +P + ++
 CARD14 726 mkdTAAHGTIPNYSRAQQQ 744

FIG. 5C

Guanylate_kin: domain 1 of 1, from 856 to 948: score -24.2, E = 0.073
 *->TRpVpRpGEvdGkdYhFVssrEemekdIaaneFlEygefqnYGTs
 +++s Ee e+ ++++ + ge++g +
 CARD14 856 --A-----EYLS-QEEYEAWSQRGDIIQEGEVSGGRCWVT 887

letvrqvakgKicilDvepQgvkrlrtaelsNPivvFIaPpsl..qe
 +++v+ +++ ++LDv ++ v l + Piv+ + + l+
 CARD14 888 RHAVESLMEKNTHALLDVQLDSVCTLHRMDIF-PIVIHVSVNEKmaKKLK 936

krLegrnkesEes<--*
 k L+++++ sEe+
 CARD14 937 KGLQRLGT-SEEQ 948

FIG. 5D

K-box: domain 1 of 1, from 239 to 325: score -36.5, E = 2.9
 *->dsyqkssgnss..lwesnyqnwqgEaaKLkaqienLQnNrngRhllG
 S+ +++++ ++ +s++++ +E+++Lk+++e+L+ +
 CARD14 239 VSSCELELQEQslRTASDQESGDEELNRLKEENEKLR--SL----- 277

EdLgsLslKELqqlEqqLEkgLEkhIRsrKnqllldqieelqkErelqee
 + sl E LEq L+++ R + + l++ i+ + + + +
 CARD14 278 ----TFSLAEKDILEQSLDEA----RGSRQE-LVERIHSLRERAVAAERQ 318

NkaLrkKiee<-*
 + + + +ee
 CARD14 319 RE---QYWEE 325

FIG. 5E

CARD14-CARD/AD

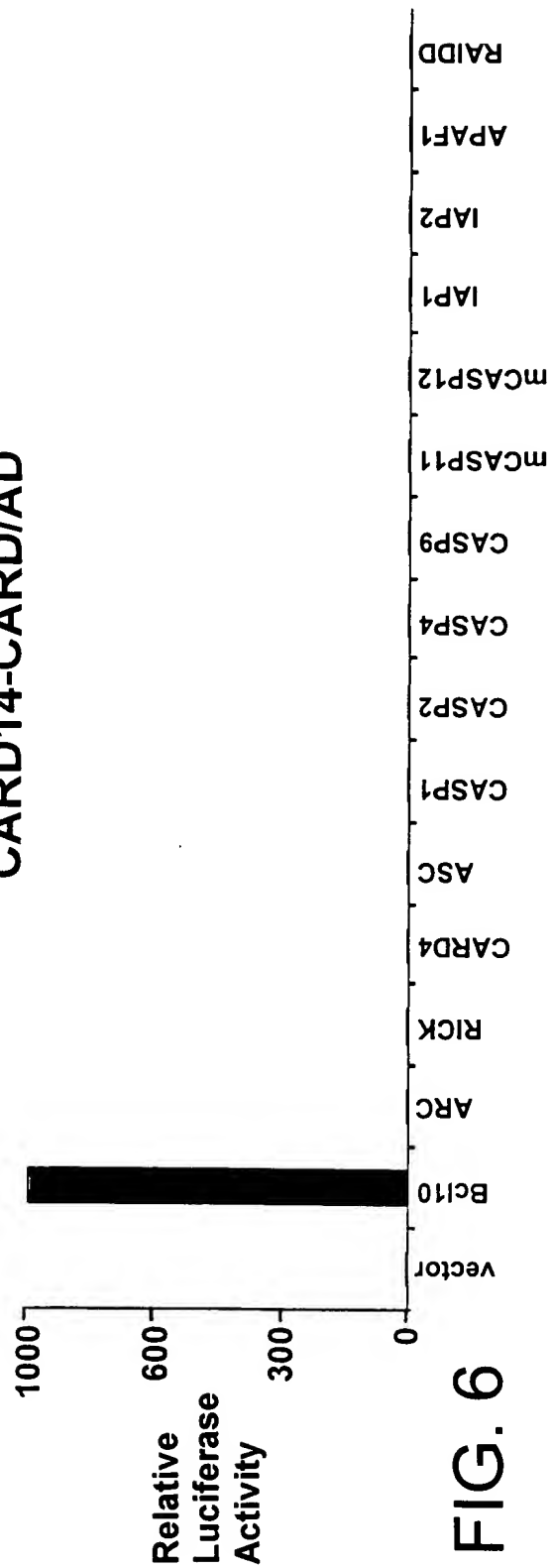


FIG. 6

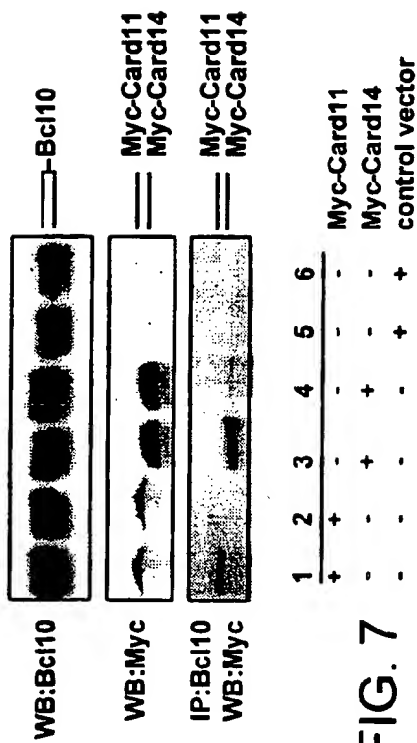


FIG. 7

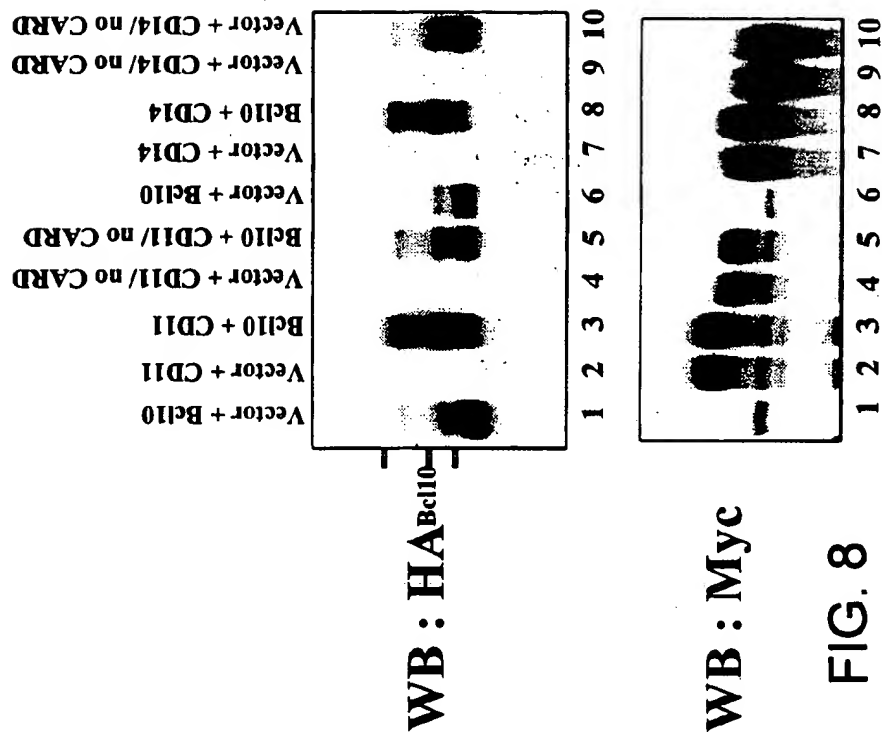


FIG. 8

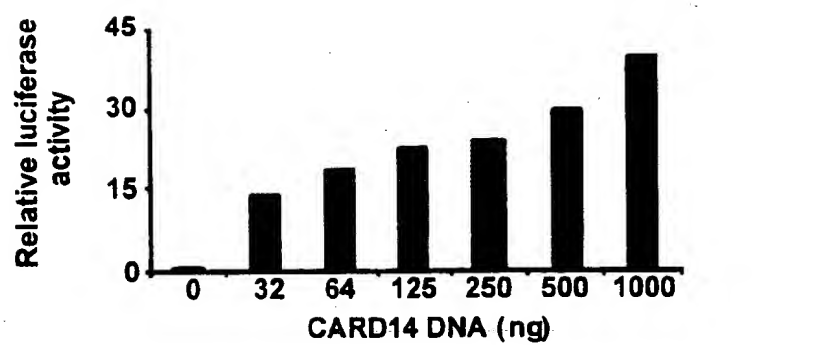


FIG. 9A

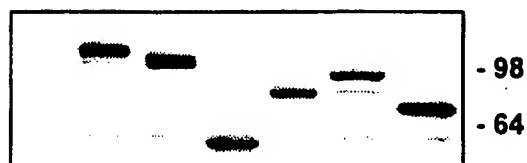
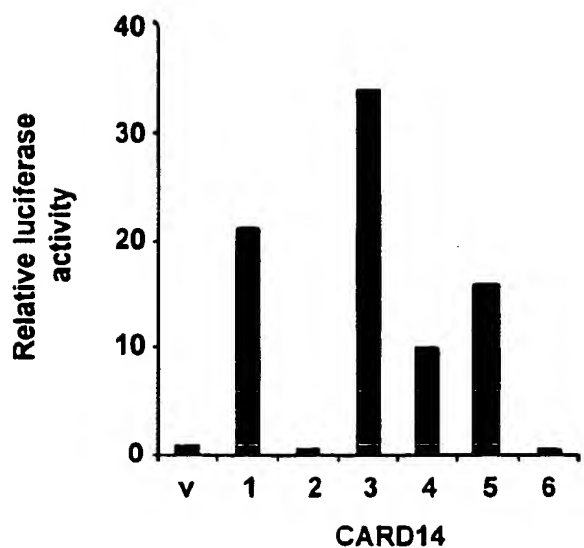


FIG. 9C

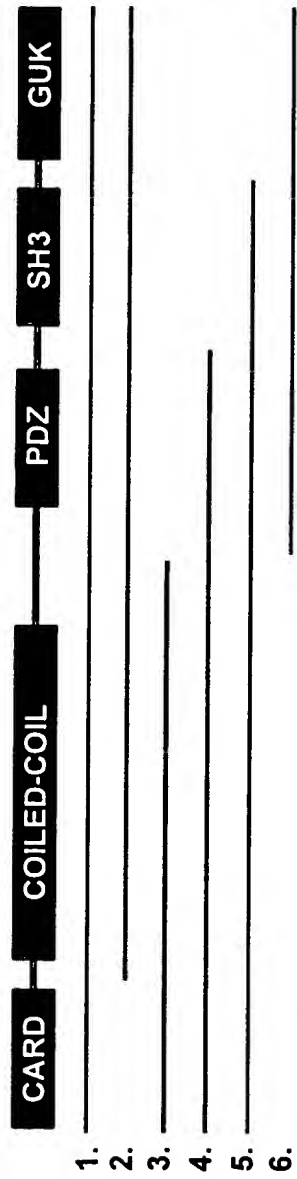


FIG. 9B